

P. A. SCORESHEETS

277566



s0B

OMB Approval Number: 2050-0095
Approved for Use Through: 4/95

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM				IDENTIFICATION			
				State: PR		CERCLIS Number: PRD980641039	
				CERCLIS Discovery Date:			
1. General Site Information							
Name: ARECIBO SOLID WASTE DISPOSAL				Street Address: State Rd. 682, Km. 10.7 Hm. 0.6			
City: Factor Ward		State: PR	Zip Code: 00612	County: Arecibo		Co. Code: 013	Cong. Dist:
Latitude: 18° 28' 20.0"		Longitude: 66° 37' 14.0"		Approx. Area of Site: 94 acres		Status of Site: Active	
2. Owner/Operator Information							
Owner: P.R. Land Authority				Operator: Arecibo Municipality			
Street Address: 1311 Fernandez Juncos Ave. Stop 19				Street Address: P.O. BOX 1086			
City: Santurce				City: Arecibo			
State: PR	Zip Code: 00908	Telephone: (809)723-2490		State: PR	Zip Code: 00613	Telephone: (809)878-7715	
Type of Ownership: State				How Initially Identified: Other SIP			

s3B

s0B

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM		IDENTIFICATION	
		State: PR	CERCLIS Number: PRD980641039
		CERCLIS Discovery Date:	
3. Site Evaluator Information			
Name of Evaluator: Jorge L. Quinones		Agency/Organization: P.R. EQB	
Date Prepared: Aug 17, 93			
Street Address: P.O.BOX 11488		City: Santurce	State: PR
Name of EPA or State Agency Contact: Francisco Claudio Rios		Telephone: (809) 764-8824	
Street Address: P.O.BOX 11488		City: Santurce	State: PR
4. Site Disposition (for EPA use only)			
Emergency Response/Removal Assessment Recommendation: No	CERCLIS Recommendation: Higher Priority SI	Signature:	
Date:	Date:	Name:	
		Position:	

s3B

s0B

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: PR	CERCLIS Number: PRD980641039
	CERCLIS Discovery Date:	

5. General Site Characteristics

Predominant Land Uses Within 1 Mile of Site: Residential Agricultural	Site Setting: Rural	Years of Operation: Beginning Year: 1973 Ending Year: 1993
Type of Site Operations: Municipal Landfill		Waste Generated: Onsite and Offsite
		Waste Deposition Authorized By: Present Owner
		Waste Accessible to the Public Yes
		Distance to Nearest Dwelling, School, or Workplace: 0 Feet

6. Waste Characteristics Information

Source Type Landfill Other Other	Quantity 9.50e+01 acres 6.00e+03 cu ft 4.86e+05 lbs	Tier A V W	General Types of Waste: Metals Organics Inorganics Solvents Laboratory/Hospital Waste Construction/Demolition Waste Pesticides/Herbicides Municipal Waste Other: PRASA Sludges
Tier Legend C = Constituent W = Wastestream V = Volume A = Area			Physical State of Waste as Deposited Solid Liquid Sludge

s3B

s0B

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM		IDENTIFICATION	
		State: PR	CERCLIS Number: PRD980641039
		CERCLIS Discovery Date:	
7. Ground Water Pathway			
Is Ground Water Used for Drinking Water Within 4 Miles: No	Is There a Suspected Release to Ground Water: Yes	List Secondary Target Population Served by Ground Water Withdrawn From:	
Type of Ground Water Wells Within 4 Miles: Municipal Private	Have Primary Target Drinking Water Wells Been Identified: No	0 - 1/4 Mile 0	
		>1/4 - 1/2 Mile 0	
Depth to Shallowest Aquifer: 8 Feet Karst Terrain/Aquifer Present: No	Nearest Designated Wellhead Protection Area: None within 4 Miles	>1/2 - 1 Mile 0	
		>1 - 2 Miles 0	
		>2 - 3 Miles 23107	
		>3 - 4 Miles 24088	
		Total 47195	

s3B

s0B

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: PR	CERCLIS Number: PRD980641039
	CERCLIS Discovery Date:	

8. Surface Water Pathway

Part 1 of 4

**Type of Surface Water Draining
Site and 15 Miles Downstream:**

Other:

Cano Tiburones Swamp

**Shortest Overland Distance From Any
Source to Surface Water:**

0 Feet
0.0 Miles

**Is there a Suspected Release to
Surface Water: Yes**

Site is Located in:
>10 yr - 100 yr floodplai

8. Surface Water Pathway

Part 2 of 4

Drinking Water Intakes Along the Surface Water Migration Path: No

Have Primary Target Drinking Water Intakes Been Identified: No

Secondary Target Drinking Water Intakes:
None

s3B

s0B

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: PR	CERCLIS Number: PRD980641039
	CERCLIS Discovery Date:	

8. Surface Water Pathway

Part 3 of 4

Fisheries Located Along the Surface Water Migration Path: Yes

Have Primary Target Fisheries Been Identified: No

Secondary Target Fisheries:

Fishery Name	Water Body Type/Flow(cfs)
Cano Tiburones	minimal stream/ <10

8. Surface Water Pathway

Part 4 of 4

Wetlands Located Along the Surface Water Migration Path? (y/n) Yes

Have Primary Target Wetlands Been Identified? (y/n) Yes

Secondary Target Wetlands:

None

Other Sensitive Environments Along the Surface Water Migration Path: Yes

Have Primary Target Sensitive Environments Been Identified: Yes

Secondary Target Sensitive Environments:

None

s3B

s0B

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM		IDENTIFICATION					
		State: PR	CERCLIS Number: PRD980641039				
		CERCLIS Discovery Date:					
9. Soil Exposure Pathway							
Are People Occupying Residences or Attending School or Daycare on or Within 200 Feet of Areas of Known or Suspected Contamination: Yes Total Resident Population: 4		Number of Workers Onsite: 1 - 100					
Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: Yes Terrestrial Sensitive Environments: State lands designated for wildlife or game management							
10. Air Pathway							
Total Population on or Within: Onsite 0 0 - 1/4 Mile 25 >1/4 - 1/2 Mile 3433 >1/2 - 1 Mile 3257 >1 - 2 Miles 5293 >2 - 3 Miles 3996 >3 - 4 Miles 4548 Total 20552		Is There a Suspected Release to Air: Yes Wetlands Located Within 4 Miles of the Site: No Other Sensitive Environments Located Within 4 Miles of the Site: Yes					
Sensitive Environments Within 1/2 Mile of the Site: <table> <tr> <td>Distance</td> <td>Sensitive Environment Type/Wetlands Area(acres)</td> </tr> <tr> <td>0 - 1/4</td> <td>State land designated for wildlife/game management</td> </tr> </table>				Distance	Sensitive Environment Type/Wetlands Area(acres)	0 - 1/4	State land designated for wildlife/game management
Distance	Sensitive Environment Type/Wetlands Area(acres)						
0 - 1/4	State land designated for wildlife/game management						

PA-Score

PA SCORESHEETS

Site Name: ARECIBO SOLID WASTE DISPOSAL
CERCLIS ID No.: PRD980641039
Street Address: State Rd. 682, Km. 10.7 Hm. 0.6
City/State/Zip: Factor Ward, PR 00612

Investigator: Jorge L. Quinones
Agency/Organization: P.R. EQB
Street Address: P.O.BOX 11488
City/State: Santurce , PR

Date: Aug 17, 93

s0B WASTE CHARACTERISTICS

Waste Characteristics (WC) Calculations:

1 Arecibo SWD	Landfill	Ref: 11	WQ value	maximum
Wastestream	2.72E+06 lbs		5.43E+02	
Area	9.50E+01 acres		1.22E+03	1.22E+03
2 PRASA Sludges	Other	Ref: 5	WQ value	maximum
Volume	6.00E+03 cu ft		8.89E+01	8.89E+01
3 BFI	Other	Ref: 1,7	WQ value	maximum
Wastestream	4.86E+05 lbs		9.72E+01	9.72E+01

WQ total 1.40E+03

** Only First WC Page Is Printed **

Waste Characteristics Score: WC = 32

s0B

Ground Water Pathway Criteria List
Suspected Release

Are sources poorly contained? (y/n/u)	Y
Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)? (y/n/u)	Y
Is waste quantity particularly large? (y/n/u)	Y
Is precipitation heavy? (y/n/u)	Y
Is the infiltration rate high? (y/n/u)	Y
Is the site located in an area of karst terrain? (y/n)	N
Is the subsurface highly permeable or conductive? (y/n/u)	Y
Is drinking water drawn from a shallow aquifer? (y/n/u)	N
Are suspected contaminants highly mobile in ground water? (y/n/u)	U
Does analytical or circumstantial evidence suggest ground water contamination? (y/n/u)	U

Other criteria? (y/n) N

SUSPECTED RELEASE? (y/n) Y

Summarize the rationale for Suspected Release:

Ground water contamination is suspected because the landfill has no liners and the water level is very high in the area.

s3B

s0B

Ground Water Pathway Criteria List
Primary Targets

Is any drinking water well nearby? (y/n/u)	Y
Has any nearby drinking water well been closed? (y/n/u)	Y
Has any nearby drinking water well user reported foul-testing or foul-smelling water? (y/n/u)	U
Does any nearby well have a large drawdown/high production rate? (y/n/u)	U
Is any drinking water well located between the site and other wells that are suspected to be exposed to a hazardous substance? (y/n/u)	U
Does analytical or circumstantial evidence suggest contamination at a drinking water well? (y/n/u)	U
Does any drinking water well warrant sampling? (y/n/u)	U

Other criteria? (y/n) N

PRIMARY TARGET(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Targets:

There are no drinking water well nearby but ther are two wells used
to provide water to dairy farms.

Ref: 8,9

s3B

s0B GROUND WATER PATHWAY SCORESHEETS

Pathway Characteristics			Ref.
Do you suspect a release? (y/n)	Yes		
Is the site located in karst terrain? (y/n)	No	14	
Depth to aquifer (feet):	8	16	
Distance to the nearest drinking water well (feet):	9363	17,18	
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	550		
2. NO SUSPECTED RELEASE		0	
LR =		550 0	

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 0 person(s)	0		
4. SECONDARY TARGET POPULATION Are any wells part of a blended system? (y/n) Y	343	0	
5. NEAREST WELL	3	0	
6. WELLHEAD PROTECTION AREA None within 4 Miles	0	0	
7. RESOURCES	5	0	
T =		351 0	

WASTE CHARACTERISTICS

WC =

32	0
----	---

GROUND WATER PATHWAY SCORE:

75

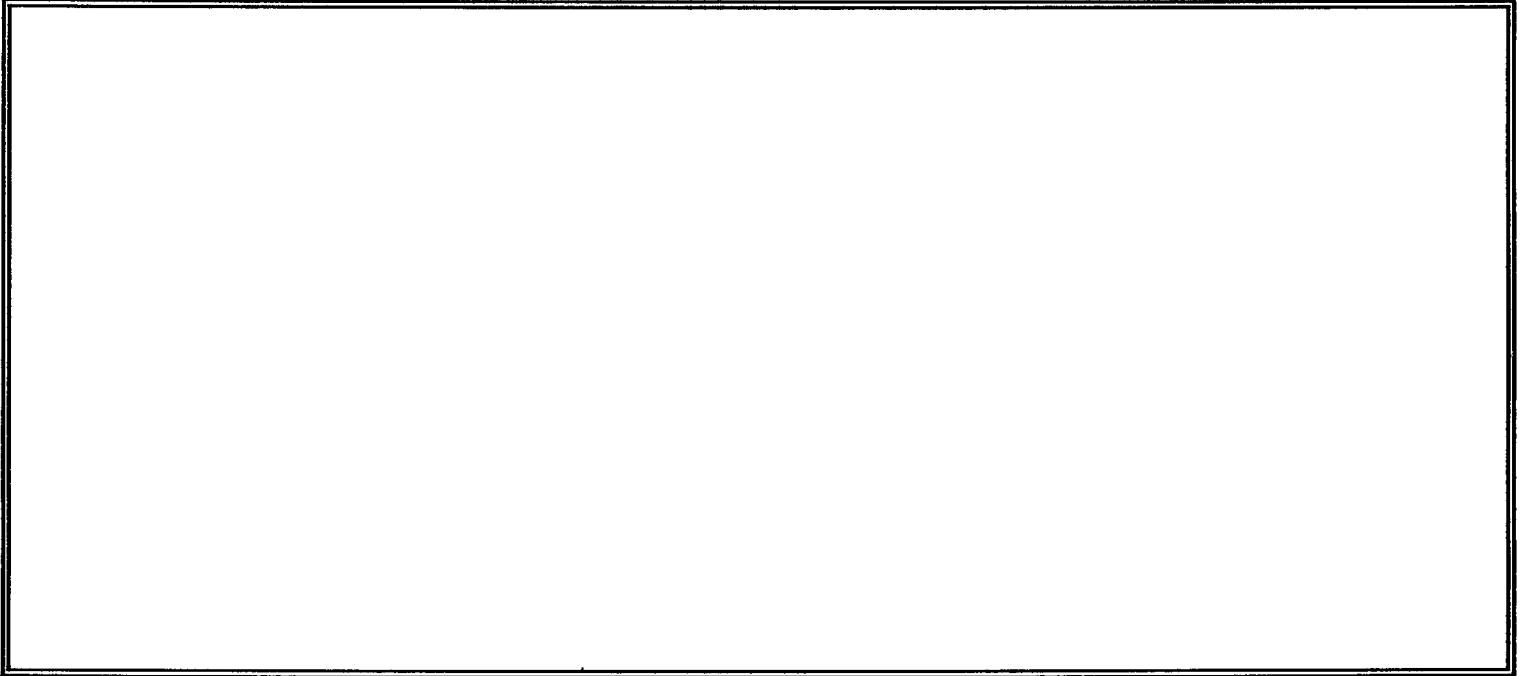
s0B Ground Water Target Populations

Primary Target Population Drinking Water Well ID	Dist. (miles)	Population Served	Reference	Value
None				
*** Note : Maximum of 5 Wells Are Printed ***				Total

Secondary Target Population Distance Categories	Population Served	Reference	Value
0 to 1/4 mile	0		0
Greater than 1/4 to 1/2 mile	0		0
Greater than 1/2 to 1 mile	0		0
Greater than 1 to 2 miles	0		0
Greater than 2 to 3 miles	23107	18	212
Greater than 3 to 4 miles	24088	18	131
Total			343

s3B

s0B Apportionment Documentation for a Blended System



s3B

s0B

Surface Water Pathway Criteria List
Suspected Release

Is surface water nearby? (y/n/u)	Y
Is waste quantity particularly large? (y/n/u)	U
Is the drainage area large? (y/n/u)	Y
Is rainfall heavy? (y/n/u)	U
Is the infiltration rate low? (y/n/u)	N
Are sources poorly contained or prone to runoff or flooding? (y/n/u)	Y
Is a runoff route well defined(e.g.ditch/channel to surf.water)? (y/n/u)	N
Is vegetation stressed along the probable runoff path? (y/n/u)	U
Are sediments or water unnaturally discolored? (y/n/u)	U
Is wildlife unnaturally absent? (y/n/u)	U
Has deposition of waste into surface water been observed? (y/n/u)	Y
Is ground water discharge to surface water likely? (y/n/u)	Y
Does analytical/circumstantial evidence suggest S.W. contam? (y/n/u)	Y

Other criteria? (y/n) N

SUSPECTED RELEASE? (y/n) Y

Summarize the rationale for Suspected Release:

Surface Water contamination is suspected because is very close to the site. Cano Tiburones is the nearest surface water body to the site and is considered a critical wildlife area.

Ref: 21-24

s3B

s0B

Surface Water Pathway Criteria List
 Primary Targets

Is any target nearby? (y/n/u)	If yes:	Y
N Drinking water intake		
Y Fishery		
Y Sensitive environment		
Has any intake, fishery, or recreational area been closed? (y/n/u)		N
Does analytical or circumstantial evidence suggest surface water contamination at or downstream of a target? (y/n/u)		Y
Does any target warrant sampling? (y/n/u)	If yes:	N
N Drinking water intake		
U Fishery		
U Sensitive environment		

Other criteria? (y/n) N

PRIMARY INTAKE(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Intakes:

There are no surface water intakes within a 4 mile radius or at 15 miles downstream.
 Cano Tiburones is not a state designated fishery however, people can be observed fishing in the area.

Ref: 17
 continued -----

s3B

s0B

continued -----

Other criteria? (y/n) N

PRIMARY FISHERY(IES) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Fisheries:

Other criteria? (y/n) N

PRIMARY SENSITIVE ENVIRONMENT(S) IDENTIFIED? (y/n) Y

Summarize the rationale for Primary Sensitive Environments:

Cano Tiburones is considered a critical wildlife area because of its potential for restoration as waterfowl area.

Ref: 22-25

s3B

s0B SURFACE WATER PATHWAY SCORESHEETS

Pathway Characteristics			Ref.
Do you suspect a release? (y/n)	Yes		
Distance to surface water (feet):	0		22
Flood frequency (years):	100		25
What is the downstream distance (miles) to:			
a. the nearest drinking water intake?	N.A.		17
b. the nearest fishery?	0.0		
c. the nearest sensitive environment?	0.0		22
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	550		
2. NO SUSPECTED RELEASE		0	
LR =	550	0	

s3B

s0B Drinking Water Threat Targets

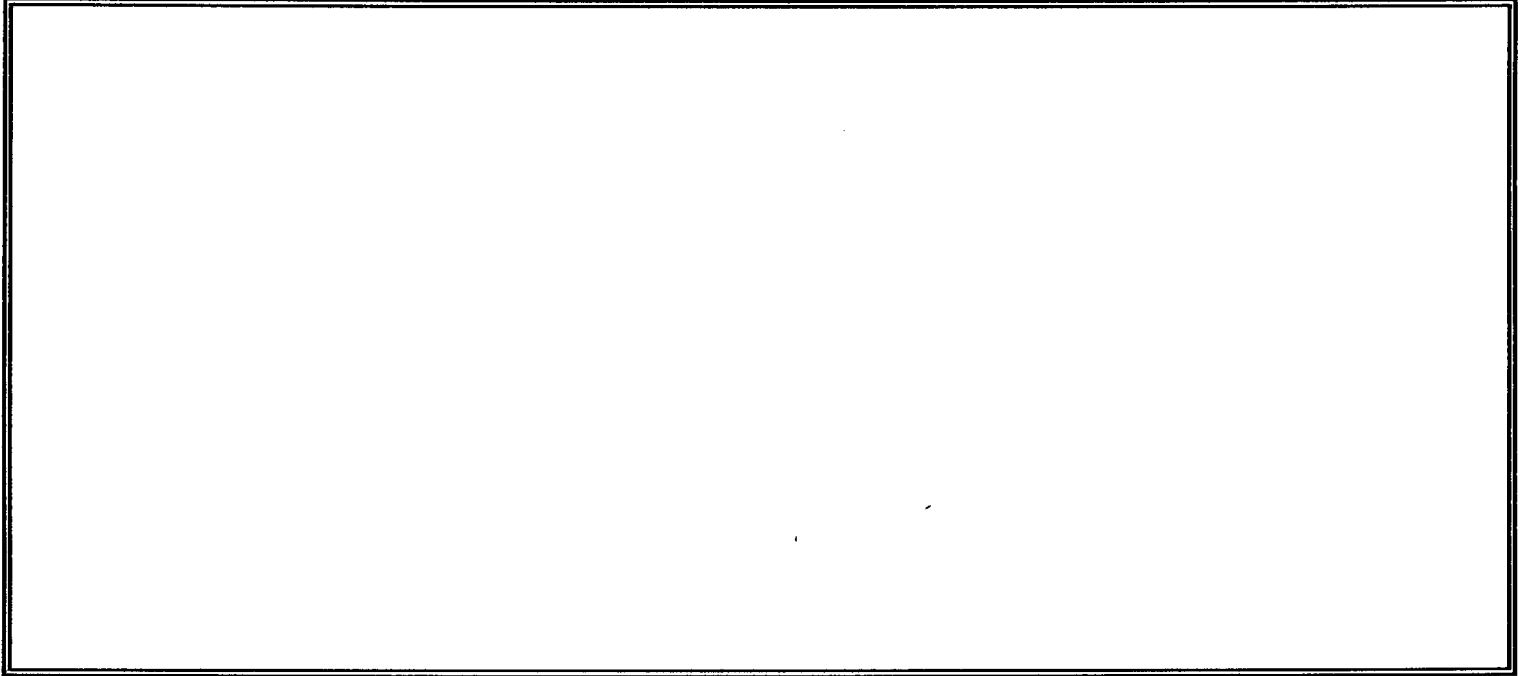
TARGETS	Suspected Release	No Suspected Release	References
3. Determine the water body type, flow (if applicable), and number of people served by each drinking water intake.			
4. PRIMARY TARGET POPULATION 0 person(s)	0		
5. SECONDARY TARGET POPULATION Are any intakes part of a blended system? (y/n): N	0	0	
6. NEAREST INTAKE	0	0	
7. RESOURCES	5	0	
T =	5	0	

Drinking Water Threat Target Populations

Intake Name	Primary (y/n)	Water Body Type/Flow	Population Served	Ref.	Value
None					
Total Primary Target Population Value					0
Total Secondary Target Population Value					0

*** Note : Maximum of 6 Intakes Are Printed ***

s0B Apportionment Documentation for a Blended System



s3B

s0B Human Food Chain Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
8. Determine the water body type and flow for each fishery within the target limit.			
9. PRIMARY FISHERIES	0		
10. SECONDARY FISHERIES	210	0	
T =	210	0	

Human Food Chain Threat Targets

Fishery Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 Cano Tiburones	N	<10 cfs		210
Total Primary Fisheries Value				0
Total Secondary Fisheries Value				210

*** Note : Maximum of 6 Fisheries Are Printed ***

s3B

s0B Environmental Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
11. Determine the water body type and flow (if applicable) for each sensitive environment.			
12. PRIMARY SENSITIVE ENVIRONMENTS	300		
13. SECONDARY SENSITIVE ENVIRONS.	0	0	
T =	300	0	

Environmental Threat Targets

Sensitive Environment Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 Cano Tiburones Swamp	Y	primary sens. envir.	24	300
None				
Total Primary Sensitive Environments Value				300
Total Secondary Sensitive Environments Value				0
*** Note: Maximum of 6 Sensitive Environments Are Printed ***				

s0B Surface Water Pathway Threat Scores

Threat	Likelihood of Release(LR) Score	Targets(T) Score	Pathway Waste Characteristics (WC) Score	Threat Score LR x T x WC / 82,500
Drinking Water	550	5	32	1
Human Food Chain	550	210	32	45
Environmental	550	300	32	60

SURFACE WATER PATHWAY SCORE:

100

s3B

s0B

Soil Exposure Pathway Criteria List
Resident Population

Is any residence, school, or daycare facility on or within 200 feet of an area of suspected contamination? (y/n/u) Y

Is any residence, school, or daycare facility located on adjacent land previously owned or leased by the site owner/operator? (y/n/u) U

Is there a migration route that might spread hazardous substances near residences, schools, or daycare facilities? (y/n/u) U

Have onsite or adjacent residents or students reported adverse health effects, exclusive of apparent drinking water or air contamination problems? (y/n/u) Y

Does any neighboring property warrant sampling? (y/n/u) U

Other criteria? (y/n) N

RESIDENT POPULATION IDENTIFIED? (y/n) Y

Summarize the rationale for Resident Population:

There is a residence adjacent to the site property (4 persons).
There are many residences near the landfill , approximately 100
residences = 314 persons.
There are 5 persons working and scavengers in the site.

Ref: 8

s3B

s0B SOIL EXPOSURE PATHWAY SCORESHEETS

Pathway Characteristics		Ref.
Do any people live on or within 200 ft of areas of suspected contamination? (y/n)	Yes	8
Do any people attend school or daycare on or within 200 ft of areas of suspected contamination? (y/n)	Yes	8
Is the facility active? (y/n):	Yes	8

LIKELIHOOD OF EXPOSURE	Suspected Contamination	References
1. SUSPECTED CONTAMINATION LE =	550	

Targets

2. RESIDENT POPULATION 4 resident(s) 0 school/daycare student(s)	40	
3. RESIDENT INDIVIDUAL	50	
4. WORKERS 1 - 100	5	
5. TERRES. SENSITIVE ENVIRONMENTS	25	
6. RESOURCES	5	
T =	125	

WASTE CHARACTERISTICS

WC = 32

RESIDENT POPULATION THREAT SCORE: 27

NEARBY POPULATION THREAT SCORE: 1

Population Within 1 Mile: 1 - 10,000

SOIL EXPOSURE PATHWAY SCORE: 28

s0B Soil Exposure Pathway Terrestrial Sensitive Environments

Terrestrial Sensitive Environment Name	Reference	Value
1 Cano Tiburones		25
Total Terrestrial Sensitive Environments Value		25

*** Note : Maximum of 7 Sensitive Environments Are Printed ***

s3B

s0B

Air Pathway Criteria List
Suspected Release

Are odors currently reported? (y/n/u)	Y
Has release of a hazardous substance to the air been directly observed? (y/n/u)	Y
Are there reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration of hazardous substances through the air? (y/n/u)	Y
Does analytical/circumstantial evidence suggest release to air? (y/n/u)	Y
Other criteria? (y/n)	N

SUSPECTED RELEASE? (y/n) Y

Summarize the rationale for Suspected Release:

Through the operational years of the site, fires had occurred which represents a potential release of contaminants to air. Also, for the poor management practices it is possible that contaminants have been released via soil particulate.

Ref: 11

s3B

s0B AIR PATHWAY SCORESHEETS

Pathway Characteristics			Ref.
Do you suspect a release? (y/n)		Yes	
Distance to the nearest individual (feet):		0	
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	550		
2. NO SUSPECTED RELEASE		0	
LR =		550 0	

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 25 person(s)	250		
4. SECONDARY TARGET POPULATION	41	0	
5. NEAREST INDIVIDUAL	50	0	
6. PRIMARY SENSITIVE ENVIRONS.	25		
7. SECONDARY SENSITIVE ENVIRONS.	0	0	
8. RESOURCES	5	0	
T =		371 0	

WASTE CHARACTERISTICS

WC =

32	0
----	---

AIR PATHWAY SCORE:

79

s3B

s0B Air Pathway Secondary Target Populations

Distance Categories	Population	References	Value
Onsite	N.A.		0
Greater than 0 to 1/4 mile	N.A.		0
Greater than 1/4 to 1/2 mile	3433	26	28
Greater than 1/2 to 1 mile	3257	26	8
Greater than 1 to 2 miles	5293	26	3
Greater than 2 to 3 miles	3996	26	1
Greater than 3 to 4 miles	4548	26	1
Total Secondary Population Value			41

s3B

s0B Air Pathway Primary Sensitive Environments

Sensitive Environment Name	Reference	Value
1 Cano Tiburones	24	25
None		
Total Primary Sensitive Environments Value		25

*** Note : Maximum of 7 Sensitive Environments Are Printed***

Air Pathway Secondary Sensitive Environments

Sensitive Environment Name	Distance	Reference	Value
None			
Total Secondary Sensitive Environments Value			

s0B

SITE SCORE CALCULATION	SCORE
GROUND WATER PATHWAY SCORE:	75
SURFACE WATER PATHWAY SCORE:	100
SOIL EXPOSURE PATHWAY SCORE:	28
AIR PATHWAY SCORE:	79
SITE SCORE:	75

s3B

s0B

SUMMARY

1. Is there a high possibility of a threat to any nearby drinking water well(s) by migration of a hazardous substance in ground water? No

If yes, identify the well(s).

If yes, how many people are served by the threatened well(s)? 0

2. Is there a high possibility of a threat to any of the following by hazardous substance migration in surface water?

A. Drinking water intake	No
B. Fishery	Yes
C. Sensitive environment (wetland, critical habitat, others)	Yes

If yes, identity the target(s).

Sensitive = Cano Tiburones

Fishery = Cano Tiburones

3. Is there a high possibility of an area of surficial contamination within 200 feet of any residence, school, or daycare facility? No

If yes, identify the properties and estimate the associated population(s)

4. Are there public health concerns at this site that are not addressed by PA scoring considerations? No

If yes, explain:

s3B